

## INSTALLATION INSTRUCTIONS: VARI STREAM Digital VSD6.1 12VDC PUMP CONTROLLER. 18/11/2011

Contents:-

Varistream Digital VSD6. – 12VDC pump controller
1 x Wiring extension kit
2 x Wire joiners – to be crimped onto wire with pliers
4 x No 6 x 9.5 Pan Posi self tapping screws
1 x Mounting plate and 2 x CT300 Cable tie

### Function:-

The unit has been designed to control the delivery of water to telescopic window cleaning poles when used in conjunction with a suitable 12VDC diaphragm pump. (For advice contact your supplier)

The unit comprises an electronic circuit mounted inside an IP56 ABS plastic box which senses the current of the motor and regulates the running speed of the pump to achieve a constant flow output. The flow output can be adjusted pressing the plus/minus buttons on the front of the unit. There is an LED display which indicates the level of flow from 0 – 9, low to high, with a 'b' setting available to select the boost function (for maximum flow). The Varistream Digital allows the user to adjust the pump shut off pressure from the outside of the Varistream.

### Installation:-

It is recommended that a qualified electrician should be consulted. No liability will be accepted by Williamson Pumps Ltd for damage caused by incorrect installation.

Fit the box into the desired position ensuring that the LED display is visible and the control buttons easily accessible. Two fixing holes are drilled in the unit base to allow the Varistream to be screwed to a panel or plate (using the screws). **IMPORTANT** Ensure the caps are fitted over the screw holes to maintain the IP rating of the box. Alternatively the mounting plate (supplied) can be fitted to the back of the box to allow the unit to be either screwed or cable tied to a bar. Ensure all wires from the controller are run neatly and secured properly (to prevent accidental snagging by people or tools) and preferably run through conduit.

### Wiring Guidelines:-

Four flying leads exit from the controller **Please take note of which wires go to the battery and which go to pump**. The red and black wires are for connection to the 12VDC supply ( the battery ). **Red to Positive**. Black to Negative (the negative cannot be wired to the vehicle chassis). **THE SUPPLY POLARITY MUST NOT BE REVERSED: Incorrect connection of the motor/pump wires will damage the unit which could be irreparable**

The orange and grey wires are for connection to the 12VDC pump. Using a standard pair of pliers connect the wires from the unit to the wires from the pump:- if using SHURflo 8000-441-138 or 8000-946-138 the orange wire to pump **Red** and grey wire to pump **Black**

If you have wired your system correctly you should have the following connections:

VariStream wire	System
Red wire	Battery positive
Black wire	Battery negative
Orange wire	Pump positive ( red wire )
Grey wire	Pump negative ( black wire )

**IMPORTANT.** For operation on 12VDC only, and should only be operated on a **maximum current of 10 Amps.** The unit is fitted with a 10 Amp auto style fuse. Spares can be purchased from your supplier.

**IMPORTANT:-**If you are fitting the controller to a new or existing SHURflo switch pump it is necessary to remove the wires that run from the pump motor to the pump pressure switch. Take the two wires that exit the pump motor and join those to the orange and grey (**red to orange** & black to grey) wires that come from the VariStream controller. The pump pressure switch should be left in place, but it is no longer wired in. Check with your supplier that the pump you intend to use with the VariStream is compatible.

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## INSTRUCTIONS FOR FITTING TO A SHURflo PUMP (8000-946-138 or 8000-441-138)

IF YOU ARE FITTING THE VARISTREAM TO A DIFFERENT PUMP, YOU MAY FIND THAT THE INSTALLATION PROCESS MAY BE SLIGHTLY DIFFERENT TO THAT OUTLINED BELOW:

**IMPORTANT** – If for any reason in the future you decide to disconnect or remove the VariStream from your system it is essential that you re-connect the wiring on your pressure switch on your pump. **If the pump is used without the VariStream and without the pressure switch wired in then the pump will not automatically switch off at pressure and damage can occur with possible risk of injury.**

- (1) Identify the pressure switch on the end of the pump. Pull and unplug the two **red wire** connectors going into pressure switch. Unclip the black plastic retainer on the side of the pump head so both wires are free.
- (2) Grab the black and **red** wires coming out of the back of the pump motor - these are the wires which need to be connected to the VariStream: **Orange TO PUMP Red wire** and Grey TO PUMP Black wire. The other **red** wire you have with a white plastic connector on, which is now not connected to the anything is now redundant and no longer needed.
- (3) Connect the **red wire** coming out of back of pump to the **Orange** wire on the VariStream using the **blue wire connector** clip using pliers. Make sure it's securely connected.
- (4) Connect the black wire coming out of back of pump to the grey wire on the VariStream using the **blue wire connector** clip using pliers. Make sure it's securely connected.
- (5) Double check that the **red** and black wires coming from back of motor are definitely connected to the **orange** and grey wires coming from the VariStream. The pump is now connected to the VariStream.
- (6) Next the positive and negative battery connections need to be connected to the two remaining connections on the VariStream controller.
- (7) Connect the **red** wire on the VariStream to the positive (**normally red but not always**) of your battery, using good quality battery terminals. Make sure it's securely connected.
- (8) Connect the black wire on the VariStream to the negative (**normally black but not always**) of your battery, using good quality battery terminals. Make sure it's securely connected.
- (9) Double check that the battery positive and negative are definitely connected to the **+** (**RED**) and **-** (**BLACK**) wires coming from the VariStream. The VariStream is now connected to your power supply. Once you have checked all connections are made, switch back on the power supply to your pump & VariStream.
- (10) Connect your window cleaning hose / pole and make sure any valves or taps are open to allow the water to flow. This allows the pump to start when the VariStream is switched on.
- (11) Push the on/off button on the VariStream once and ensure the **green lamp** is constantly on and that the pump runs.
- (12) Using the up/down arrows select the flow required. Once done the VariStream will ensure you get the same flow irrespective of the height of the pole that you use.

If you have followed the VariStream instructions correctly you should end up with a system set up which looks like this:

If the pump is not working it is important to check the following things:  
IS WATER SUPPLY FROM TANK OPEN?  
IS HOSE / POLE CONNECTED?  
IS POWER SUPPLY SWITCHED ON?  
ARE THE FOUR WIRE CONNECTIONS MADE PROPERLY?  
(please note in a small number of cases the wiring on your vehicle / trolley may not be suitable for the cable connector clips supplied in this instance it is recommended that you use standard terminal block to connect the wires and wrap in insulating tape to protect the joint.)

If you are still unable to make the VariStream function  
Please contact your system supplier  
or a suitably qualified auto electrician for assistance

### Accessories & Order codes:-

R330142 - Wire joiner blue

R262320 - 10 Amp fuse (auto style)

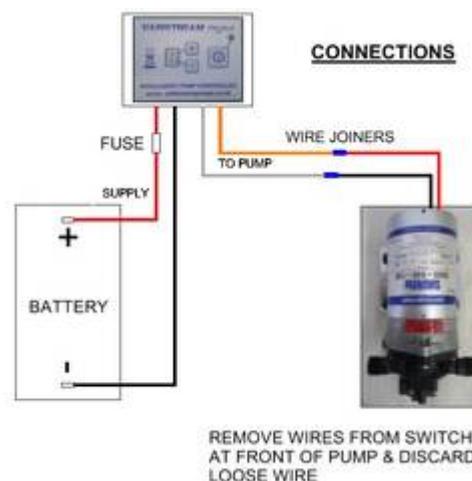
CT300.3.5 - Cable tie

52139 V/stream Digital AL mounting plate

VariStream Digital VSD6 PCB -12VDC – Printed Circuit Board

8000-441-138 – SHURflo diaphragm pump, 12vDC, 100PSI max pressure, 4 Litre per minute max flow

8000-946-138 - SHURflo diaphragm pump, 12vDC, 100PSI max pressure, 5 Litre per minute max flow



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